

QUALITY ASSURANCE SAMPLING PLAN
FOR
MISSISSIPPI CANYON OIL SPILL
PLAQUEMINES PARISH, LOUISIANA

Prepared for

U.S. Environmental Protection Agency Region 6
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Contract No. EP-W-06-042
Technical Directive Document No. TO-
WESTON Work Order No.
NRC No. N/A
CERCLIS No. N/A
FPN N/A
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April 2010

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1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START-3) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 Prevention and Response Branch (PRB) under Contract Number EP-W-06-042 to conduct air, water and sediment sampling and air and water monitoring for the Mississippi Canyon Oil Spill off the coast of Louisiana near Venice, Plaquemines Parish, Louisiana. Region 4 has requested that state and local air monitoring agencies located near the Gulf of Mexico coastline in Florida, Alabama and Mississippi adjust their sampling schedules for this event. A Proposed Air Monitoring Locations Map is provided as Figure 1-1. START-3 (with input from Region 4 and EPA-ERT) has prepared this Quality Assurance Sampling Plan (QASP) to describe the technical scope of work to be completed as part of this Emergency Response. In the event of future burns and depending on where the oil comes ashore an additional air monitoring plan will need to be generated to include sites in Region 4.

1.1 PROJECT OBJECTIVES

As part of the in-situ burn process and resulting plume observation, EPA will conduct air sampling and air monitoring. The objective of the sampling and monitoring will be to assess the impacts of the Mississippi Canyon Oil Spill on the air and water quality of far southeast Louisiana, specifically the area around Venice, Duvic and Fort Jackson, Plaquemines Parish and an area between Alluvial City and Chalmette in St. Bernard Parish, Louisiana. EPA will utilize PQ200 air samplers, DataRAM DR-4000 particulate monitors, Tedlar bags for VOC grab samples and AreaRAE air monitors. Additionally, Summa Canisters with flow controllers will be used to sample for volatile organic compounds. Each monitoring instrument will be set up to log data. The Summa Canisters will be set up to collect a sample every 8 hours. The PQ200 air samplers will be set up to collect one sample every 24 hours. EPA will utilize multi-parameter water quality instruments, and water and sediment sampling equipment for water sampling and monitoring.

Air samples will be collected by the PQ200 and analyzed for concentrations of particulates 2.5 microns and smaller. Volatile Organic Compound (VOC) grab samples will be collected using

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Tedlar bags and low flow pumps and analyzed using EPA TAGA bus. VOC 8 hour samples will be collected using the Summa Canister and analyzed by method TO-15A. DataRAMs will be used in real-time monitoring of the PM-2.5 particulate levels and AreaRAEs to monitor for VOCs.

1.2 PROJECT TEAM

The Project Team will be divided into multiple locations and multiple teams based upon site conditions and operations. As the meteorological and operational situations change, sampling and monitoring teams and operations will adapt, based upon direction from the Unified Command. EPA OSCs and START from Region 6 will have responsibility for sampling and monitoring in Louisiana, and Texas if necessary.

EPA OSCs and START from EPA Region 4 will have responsibility for sampling and monitoring of the plume in Mississippi and Alabama as necessary. EPA ERT members will assist EPA Region 6 and 4 with sampling and data collection and analysis as needed. EPA will coordinate with the Unified Command through EPA OSCs located in Houma, Louisiana.

2. SITE DESCRIPTION AND BACKGROUND

The Gulf of Mexico Transocean Oil spill source is located approximately 52 miles southeast of Venice, Plaquemines Parish, Louisiana, (28.73667° N, -88.38722° W). The source is a leaking production well as well as a release of diesel fuel caused by damage from the sinking of the Transocean Deepwater Horizon drill rig at BP Site Mississippi Canyon 252. The current spill is estimated to be approximately 80 miles east to west and 42 miles north to south in size. The spill is affected by wind and wave action, which is currently keeping the spill offshore, however, forecasted weather conditions in the coming days is predicted to push the spill towards the southeast Louisiana coastline. Through coordination with the United State Coast Guard, British Petroleum PLC (BP), the Responsible Party, through their Oil Spill Response Organization (OSRO) contractors and the is planning to burn the oil in sections while weather conditions are favourable.

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3. SAMPLING APPROACH AND PROCEDURES

Samples collected by START-3 will be used to evaluate the nature of the contaminants present. EPA will conduct air monitoring and sampling along the Louisiana coastline as part of the in-situ burn process and resulting plume observation. EPA will collect water and sediment samples as necessary, including background water and sediment sampling around the Venice Louisiana area. Samples collected as part of this ER will be obtained in accordance with WESTON Standard Operating Practices (Appendix A).

3.1 OVERVIEW OF SAMPLING ACTIVITIES

START-3 will conduct air monitoring of VOCs and sampling of PM-2.5 as well as VOCs. The PM-2.5 standard includes particles with a diameter of 2.5 micrometers or less. Air monitoring and sampling will involve three air monitoring locations in Plaquemines Parish and three locations in St. Bernard Parish. Each air monitoring location will consist of one BGI PQ200 air sampler collecting air samples for PM-2.5 and one Summa Canister collecting ambient air for VOC analysis. Tedlar bags will be used to collect grab samples for VOC analysis as necessary. Additionally, each air monitoring site will include one DataRAM DR-4000 to monitor the particulate levels and one AreaRAE PGM-5020 to collect readings for VOC using the 10.6 eV PID lamp. This plan will be amended to include sampling location is EPA Region 6 as necessary. START-3 will use EPA Scribe Environmental Sampling Data Management System (SCRIBE) software to manage sample data.

3.1.1 Data Quality Objectives

The objective of air monitoring and sampling will be to confirm the presence of particulates (2.5 microns and smaller) and VOCs in air resulting from the off shore in-situ burn and from expected impacts with the oil spill coming on-shore.

3.1.2 Health and Safety Implementation

The monitoring will be conducted in accordance with the site-specific HASP. START-3 will conduct air monitoring in Level D personal protective equipment (PPE) as stated in the site

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HASP. The Field Safety Office (FSO) will be responsible for implementation of the HASP during the removal action. In accordance with the START-3 general health and safety operating procedures, the START-3 personnel will drive the route to the hospital specified in the HASP prior to initiating sampling activities. Personnel working over water will use USCG approved personal flotation devices and observe all safety instructions from the boat drivers.

The START-3 field team will mobilize the equipment required for the removal from the EPA warehouse located in Addison, Texas, and from WESTON's Regional Equipment Store (RES) warehouse in Houston, Texas, as necessary. If possible, START-3 will use government furnished property.

3.2 SAMPLING/MONITORING APPROACH

Air sampling and monitoring will be conducted in general accordance with the EPA guidelines and standard industry practices, included the DRAFT START-3 Emergency Response Air QASP and with WESTON Standard Operating Procedures (SOPs). The Region 4 samples will be collected following SESD's standard operating procedures.

All water and sediment samples will be collected in general accordance with the WESTON Standard Operating Procedures (SOPs) 1002-01 for Surface Water Sample Collection and 1002-04 for Sediment Sampling as well as EPA Environmental Response Team SOPs 2013 (surface water sampling), 2016 (sediment sampling) and the Methods for Collection, Storage and Manipulation of Sediments for Chemical and Toxicological Analysis: Technical Manual. The specific sampling procedures are described below.

3.2.1 Air Sampling

START-3 will deploy PQ200 air samplers equipped with a filter cassette to measure PM_{2.5} concentrations in ambient air at three locations in Plaquemines Parish and three locations in St. Bernard, Louisiana. The samplers will be set up at the pre-determined sampling locations that will be selected using local meteorological data, daily observations, distances from sources of

interference, and locations of burning activities. Prior to use, START-3 will calibrate the samplers with the representative sampling media to verify correct flow rates. Current meteorological conditions will be documented at each sample location when each sample period begins and ends. START-3 will collect one 24-hour air PM-2.5 samples at each station for the duration of the in-situ burn or as directed by EPA OSC. START-3 will also collect three 8-hour air samples using a Summa Canister with a flow controller at each air monitoring location. The Summa Canister will be mounted and secured no less than one meter from the ground. The flow controllers will be calibrated and checked for accuracy by the laboratory prior to sampling and between each sampling run. Additional VOC grab samples will be collected using 1 liter Tedlar bags each being allowed to collect ambient air using a low-flow air pump (SKC or equivalent) for approximately 10-15 seconds. These Tedlar bags will be held and analyzed for VOCs through method TO-15 by the EPA Trace Atmospheric Gas Analyzer bus, two of which are currently staged in the operational area.

EPA ASPECT aerial flyovers will take place during in-situ burn operations. The ASPECT will collect information of the plume including particulates and combustion products.

3.2.2 Particulate Air Monitoring

START-3 will conduct baseline particulate (dust) monitoring downwind of the in-situ burn using DataRAM instruments over a 24-hour period during burning activities. The DataRAM instrument will be capable of data logging, and the results will be logged no less than every 5 minutes and downloaded to a computer at the end of each operating period. Air monitors will be collocated with PQ200 air samplers, which will be selected using local meteorological data, daily observations, and locations of burning activities. This logged particulate data will be distributed through the Unified Command as directed by EPA OSC to support the NOAA SMART Air Monitoring Plan for In-Situ Burns.

3.2.3 Water and Sediment Sampling

Sediment samples will be collected. The exact number of samples and locations of the samples will be decided by the EPA OSC and START-3 PTL. The sediment samples will be submitted to a qualified subcontracted commercial laboratory for the following analyses:

- Total Compound List Volatile Organic Compounds (TCL VOCs) by SW-846 Method 8260B.
- TCL Semivolatile Compounds (SVOCs) by SW-846 Method 8270D.
- Total Analyte List (TAL) Metals by SW-846 Method 6010C.
- Mercury by SW-846 Method 7471.
- Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH GRO) by SW-846 Method 8015B.
- Total Petroleum Hydrocarbons – Diesel and Oil Range Organics (TPH DRO/ORO) by SW-846 Method 8015B.
- Polynuclear Aromatic Hydrocarbons (PAH) by SW-846 Method 8270D SIM.

Laboratory-specific analyte lists and reporting limits will be included as received from the laboratories. Deviations from the sample locations will be due to new observations made prior to sampling, information obtained in the field that warrants an altered sampling point, difficulty in sample collection, or limited access. The EPA OSC will be notified, and concurrence will be obtained should significant deviations from the planned sampling points be proposed. Details regarding deviations of the QASP will be documented in the site logbook.

START-3 will collect surface water samples as part of the response. The exact number of samples and locations of the samples will be decided by the EPA OSC and START-3 PTL. Surface water samples will be submitted to a qualified subcontracted commercial laboratory for the following analyses:

- Total Compound List Volatile Organic Compounds (TCL VOCs) by SW-846 Method 8260B.
- TCL Semivolatile Compounds (SVOCs) by SW-846 Method 8270D.
- Total Analyte List (TAL) Metals by SW-846 Method 6010C.
- Mercury by SW-846 Method 7470.
- Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH GRO) by SW-846 Method 8015B.
- Total Petroleum Hydrocarbons – Diesel and Oil Range Organics (TPH DRO/ORO) by SW-846 Method 8015B.

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- Polynuclear Aromatic Hydrocarbons (PAH) by SW-846 Method 8270D SIM.

The laboratory-specific analyte list and reporting limits will be included in the QASP when received

3.2.4 Air Sampling and Monitoring Program for Oil at Landfall

The air sampling and monitoring program for Mississippi Canyon Oil Spill landfall operations will be modified as necessary to adjust for wind direction and landfall location. In summary, the program will include real-time monitors, aerial flyovers as necessary, real-time speciated VOC sampling for BTEX compounds using the Trace Atmospheric Gas Analyzer (TAGA) and collection of whole air samples using Summa Canisters and grab samples using Tedlar bags as identified below:

- TAGA sampling in downwind shore locations for BTEX and any other appropriate compounds (ERT) – available beginning Mid-day April 30;
- ASPECT if necessary and appropriate for oil spill delineation (NDT) – Daylight operations, as necessary;
- Downwind dataRAM/miniRAM particulate monitors near potentially exposed populations (R6 or R4 START) – available beginning April 28;
- Summa Canister capability for 8-hour composite samples for VOCs (R6 or R4 START) – available beginning April 28;
- Tedlar Bag grab samples for VOCs on odor complaints and as necessary (R6 and R4 START) available beginning April 29;
- AreaRae and MultiRae detectors as appropriate for odor complaints (R6 or R4 START) – available beginning April 28;
- Additional elements to be added as required.

3.2.5 Sampling and Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected will be sufficient to perform the analysis requested. Samples will be stored in the proper types of containers and preserved in a manner for the analysis to be performed per laboratory guidelines.

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Dedicated sampling equipment, sample containers, and PPE will be maintained in a clean, segregated area. It is anticipated that each sample will be collected with dedicated sampling equipment and placed directly onto the laboratory supplied glass fibre filters. Personnel responsible for sampling will change gloves between each sample collection/handling activity. Each sample will be assigned a unique identification number and assembled and catalogued prior to shipping to the designated laboratory. Summa Canisters will be handled per laboratory and manufacturers guidance, observing safe and effective collection and preservation of the data.

START-3 will collect field duplicate samples of air samples, both filters and canisters, and prepare filter blanks as needed during the removal action. QA/QC samples will be collected according to the following:

- Blind field collocated air samples will be collected during sampling activities at locations selected by the EPA OSC and START-3 PTL. The data obtained from these samples will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples in locations where there is visual evidence of contamination or where contamination is suspected. Blind field collocated samples will be collected at the rate of one duplicate for every 10 samples collected.
- Filter blanks will be prepared by analyzing a laboratory supplied filter from the same batch as the collected samples at a rate of one filter per batch per day. The blank filter will be used to evaluate possible contamination.

START-3 will collect field duplicate and MS/MSD samples of soil, sediment, and surface water and prepare equipment rinsate blank samples as needed during the removal assessment sampling activities. QA/QC samples will be collected according to the following dictates:

- Blind field duplicate samples will be collected during sampling activities at locations selected by the START-3 PTL. The data obtained from these samples will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples in locations where there is visual evidence of contamination or where contamination is suspected. Blind field duplicate samples will be collected at the rate of one duplicate for every 10 samples collected.
- Equipment rinsate blanks will be prepared by pouring laboratory-grade deionized water over nondisposable sampling equipment after it has been decontaminated and collecting the rinse water in sample containers for analyses. These samples will be prepared to demonstrate that

the equipment decontamination procedures for the sampling equipment were performed effectively. No equipment rinsate blanks will be collected as part of this sampling activity as dedicated sampling equipment will be used as part of the sampling activity.

- Field blanks will be collected when VOC samples are taken and are analyzed only for VOC analytes. The field blank consists of American Society of Testing and Materials (ASTM) Type II reagent-grade water poured into a VOC sample vial at the sampling site. It is handled like an environmental sample and transported to the laboratory for analysis. Field blanks are used to assess the potential introduction of contaminants from ambient sources (e.g., gasoline motors in operation, etc.) to the samples during sample collection. No field blanks will be collected as part of this sampling activity.
- Laboratory prepared trip blanks will be submitted with each shipment containing samples for VOC analysis. The laboratory prepared trip blanks will consist of two 40-milliliter glass sample containers with Teflon-lined septum caps. The trip blanks will be prepared with deionized water prior to leaving the laboratory. Trip blanks are used to evaluate the potential cross-contamination that may occur during the shipment of samples.
- Temperature blanks will be prepared in the field and will consist of one 40-milliliter glass sample container with Teflon-lined septum cap. The temperature blank will be packaged along with the field samples in the shipping cooler and will represent the temperature of the incoming cooler upon receipt at the laboratory. Use of these samples within a shipping container enables the laboratory to assess the temperature of the shipment without disturbing any of the field samples.
- MS/MSD samples will be collected during sampling activities at locations selected by the START-3 PTL. The data obtained from these samples will be used to assist in the quality assurance of the sampling procedures and laboratory analytical data by allowing an evaluation of reproducibility of results. Efforts will be made to collect MS/MSD samples in locations where there is no visual evidence of contamination or where contamination is not suspected. MS/MSD samples will be collected at the rate of one MS/MSD sample per matrix for every 20 samples collected.

3.2.6 Investigation-Derived Wastes

Attempts will be made to eliminate or minimize generation of IDW during this investigation. All non-dedicated equipment will be decontaminated according to WESTON SOP 1201.01. Non-dedicated equipment will be rinsed with soap and water and attempts will be made to dispose of decontamination fluids on-site. The analytical data from collected samples will be reviewed after completion of the field activities, and disposal options will be evaluated accordingly. It is anticipated that minimal amounts of IDW will be generated during this activity.

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3.2.7 Sampling and Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected must be sufficient to perform the laboratory analysis requested. Samples must be stored in the proper types of containers and preserved in a manner appropriate to the analysis to be performed. A sample collection and analyses summary table is presented in Section 3.

All clean, decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. All samples will be collected with clean decontaminated equipment following WESTON SOP 1201.01. All samples collected for laboratory analysis will be placed directly into pre-cleaned, unused glass or plastic containers. Sampling personnel will change gloves between each sample collection/handling. All samples will be assembled and catalogued prior to shipping to the designated laboratory (following WESTON SOP 1101.1 and 1102.01).

3.3 SAMPLE MANAGEMENT

Specific nomenclature that will be used by START-3 will provide a consistent means of facilitating the sampling and overall data management for the project (WESTON SOP 0110.04). The START-3 Assessment/Inspection Manager must approve any deviations from the sample nomenclature proposed below.

As stated in WESTON SOP 0110.04, sample nomenclature will follow a general format regardless of the type or location of the sample collected. The general nomenclature consists of the following components:

- Geographic location (e.g., location within a school or park).
- Collection type (composite, grab, etc.).
- QA/QC type (normal, duplicate, etc.).
- Sequence - An additional parameter used to further differentiate samples.

Sample data management will be completed utilizing SCRIBE including Chain-of-Custody (COC) and sample documentation needs.

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3.4 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES

Once collected, air samples will be stored in antistatic plastic baggies. The PM 2.5 samples will also be stored at and shipped at 4 degrees centigrade. There are no holding time requirements for the sample storage. The samples will be sent to the designated laboratory by a common carrier.

Water samples will be stored in coolers on-site until shipped for laboratory analysis. The samples will be shipped via common carrier to the laboratory or driven by START-3 members.

START-3 will receive analytical results based on discussions with the SAM. This turnaround time (TAT) is initiated when the samples are collected in the field and continues until the analytical results are made available to START-3 either verbally or by providing facsimile or email copies of the results for review.

All samples that have been analyzed will be disposed by the designated laboratory in accordance with the laboratory SOPs.

Table 3-1
Requirements for Containers, Preservation Techniques, Volumes, and Holding Times
Mississippi Canyon Oil Spill
Plaquemines Parish, Louisiana

Name	Analytical Methods	Matrix	Container	Preservation	Minimum Volume or Weight	Maximum Holding Time
Particulate Matter (PM-2.5)	40 CFR Part 50, Appendix L and QAGD 2.12	Air	PTFE Filter	Antistatic bags, 4 C	NA	NA
VOCs	TO-15	Air	Summa Canister / Tedlar Bag	None	6 Liter @ 11.5 mL/min + 10% for an 8 hour sample collection	30 days
TCL VOCs	SW846 8260B	glass, (Teflon-lined septum for water)	4°C, HCl to pH<2 (pH adjust for water only)	3 x 40 mL vials (water, 4 oz (solid)	14 days (7 days if unpreserved by acid for water)	TCL VOCs

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Name	Analytical Methods	Matrix	Container	Preservation	Minimum Volume or Weight	Maximum Holding Time
TCL SVOCs	SW846 8270D	Amber glass, (Teflon-lined for water)	4°C	2 x 1 liter, 8 oz	7 days extract (water), 14 days (solid)/ 40 days analysis	TCL SVOCs
TAL Metals and Mercury	SW846 6010C and SW846 7470A	Polyethylene (water), Glass (solid)	HNO ₃ to pH<2 (water), 4°C	500 mL, 8oz	28 days for mercury 180 days all other metals	TAL Metals and Mercury
TPH GRO	SW846 8015B	glass, (Teflon-lined septum for water)	4°C, HCl to pH<2 (pH adjust for water only)	3 x 40 mL vials (water, 4 oz (solid)	14 days (7 days if unpreserved by acid for water)	TPH GRO
TPH DRO and ORO	SW846 8015B	Amber glass, (Teflon-lined for water)	4°C	2 x 1 liter, 4 oz	7 days extract (water), 14 days (solid)/ 40 days analysis	TPH DRO and ORO
PAH	SW846 8270D SIM	Amber glass, (Teflon-lined for water)	4°C	2 x 1 liter, 8 oz	7 days extract (water), 14 days (solid)/ 40 days analysis	PAH

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4. ANALYTICAL APPROACH

4.1 ANALYTICAL METHODS

Samples collected by START-3 will be analyzed by an EPA Region 6 Approved Laboratory utilizing 40 CFR Part 50, Appendix L and QAGD 2.12 for particulate matter and EPA Method TO-15 for VOCs. The START-3 PTL will indicate on the Chain of Custody that a Level IV data package is required. The lab contacts and shipping information are as follows:

Air Toxics – TO-15 for VOCs

180 Blue Ravine Road, Suite B
Folsom, California 95630
Tel: 1.800.985.5955
Contact: Karen Lopez

Chester Labnet – Particulate PM.25

12242 SW Garden Place
Tigard, Oregon 97223
Tel: 503.624.2183
Contact: Paul Duda

Deliverables will include preliminary data via email in pdf format and an EDD in excel format. The final data deliverable will include a full CLP-like data package in PDF format and a final EDD in excel format.

The water and sediment samples will be submitted to a qualified subcontracted commercial laboratory for the following analyses with a turn-around-time of 24 hours for analytical results.

- Total Compound List Volatile Organic Compounds (TCL VOCs) by SW-846 Method 8260B.
- TCL Semivolatile Compounds (SVOCs) by SW-846 Method 8270D.
- Total Analyte List (TAL) Metals by SW-846 Method 6010C.
- Mercury by SW-846 Method 7470A/7471.

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- Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH GRO) by SW-846 Method 8015B.
- Total Petroleum Hydrocarbons – Diesel and Oil Range Organics (TPH DRO/ORO) by SW-846 Method 8015B.
- Polynuclear Aromatic Hydrocarbons (PAH) by SW-846 Method 8270D SIM.

4.2 DATA VALIDATION

START-3 will validate the analytical data generated by PEL Laboratories using EPA-approved validation procedures in accordance with the EPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review. A summary of the data validation findings will be presented in Data Validation Summary Reports as part of the final report. START-3 will evaluate the following applicable parameters to verify that the analytical data is within acceptable QA/QC tolerances:

- The completeness of the laboratory reports, verifying that required components of the report are present and that the samples indicated on the accompanying chain-of-custody are addressed in the report.
- The calibration and tuning records for the laboratory instruments used for the sample analyses.
- The results of internal standards analyses.
- The results of laboratory blank analyses.
- The results of laboratory control sample (LCS) analyses.
- The results of matrix spike/matrix spike duplicate (MS/MSD) analyses.
- The results of surrogate recovery analyses.
- Compound identification and quantification accuracy.
- Laboratory precision, by reviewing the results for blind field duplicates.

Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.

5. QUALITY ASSURANCE

Quality assurance will be conducted in accordance with the WESTON Corporate Quality Management Manual, dated March 2004; and the WESTON START-3 Quality Management Plan, dated July 2007. Following receipt of the TDD from EPA, a Quality Control (QC) officer will be assigned and will monitor work conducted throughout the entire project including reviewing interim report deliverables and field audits. The START-3 PTL will be responsible for QA/QC of the field sampling and monitoring activities. The designated laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. START-3 will also collect samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received. Air monitoring activities occurring within Region 4 will follow SEDS approved Standard Operating Procedures.

5.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under chain-of-custody (COC) procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. Personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

START-3 personnel will prepare and complete chain-of-custody forms using the Scribe Environmental Sampling Data Management System (SCRIBE) for all samples sent to a START-3 designated off-site laboratory. The chain-of-custody procedures are documented and will be made available to all personnel involved with the sampling. A typical chain-of-custody record will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who

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originally relinquished the samples. At the completion of the project, the data manager will export the SCRIBE chain-of-custody (COC) documentation to the Analytical Service Tracking System (ANSETS) database.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. This custody records document transfer of sample custody from the sampler to another person or to the laboratory.
- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to seal to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.
- If sent by common carrier, a bill of lading or airbill will be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 (Appendix C) describe these procedures in more detail.

5.2 PROJECT DOCUMENTATION

Field observations will be recorded legibly and in ink and by entry into field logbooks, Response Manager, or SCRIBE. Response Manager is the Enterprise Data Collection System designed to provide near real-time access to non-analytical data normally collected in logbooks. Response Manager provides a standard data collection interface for modules of data normally collected by START-3 field personnel while on-site. These modules fall into two basic categories for Response and Removal. The modules include Emergency Response, Reconnaissance, Facility Assessment, Shipping, Containers, Materials, Calls, HHW, and General/Site Specific data. The system provides users with a standard template for laptop/desktop/tablet PCs that will synchronize to the secure web interface using merge replication technology to provide access to field collected data via on the RRC-EDMS EPA Web Hub. Response Manager also includes a PDA application that provides some of the standard data entry templates from Response

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Manager to users for field data entry. Response Manager also includes an integrated GPS unit with the secure PDA application, and the coordinates collected in Response Manager are automatically mapped on the RRC-EDMS interactive mapping site. GIS personnel can then access this data to provide comprehensive site maps for decision-making support.

Response Manager also includes an Analytical Module that is designed to give SCRIBE users the ability to synchronize the SCRIBE field data to the RRC-EDMS Web Hub. This allows analytical data managers and data validators access to data to perform reviews from anywhere with an Internet connection. The Analytical Module is designed to take the analytical data entered into EPA SCRIBE software and make it available for multiple users to access on one site. START-3 personnel will utilize SCRIBE for data entry on-site and will upload to the Response Manager Analytical module.

5.2.1 Field Documentation

The following field documentation will be maintained as described below.

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. Logbook entries will be signed by the individuals making them. Entries should include, at a minimum, the following:

- Site name and project number.
- Names of personnel on-site.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain-of-custody information.
- Records of photographs.

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- Site sketches of sample location including identification of nearest roads and surrounding developments.
- Calibration results.

Sample Labels

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.

Chain-of-Custody Record

A chain-of-custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of the record will be kept by each individual who has signed it. The chain-of-custody is discussed in Subsection 6.1 Sample Custody Procedures.

Custody Seal

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photographic Documentation

START-3 will take photographs to document site conditions and activities. Photographs should be taken with either a film camera or digital camera capable of recording the date on the image. Each photograph will be recorded in the logbook and within Response Manager with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the photograph location, direction, and subject will also be shown on a site sketch and recorded within Response Manager.

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5.2.2 Report Preparation

At the completion of the project, START-3 will review and validate laboratory data and prepare a draft report of field activities and analytical results for EPA OSC review. Draft deliverable documents will be uploaded to the EPA TeamLink website for EPA OSC review and comment.

5.2.3 Response Manager

START-3 will use the Response Manager module located on the EPA Web Hub, <https://solutions.westonproject.net/epawebhub/>, to collect and organize the data collected from project activities. The information to be included encompasses some or all of the following depending on the specific project needs:

- General Module – Site specific data including location and type of site. It also includes an area for key site locations including geo-spatial data associated with the key site locations.
- Emergency Response Module – includes the following sub-modules: Basic Info, HAZMAT, Release, Time Line Log, Incident Zones, Photos, Sensitive Receptors, Evacuations, Source, Cause, and Weather.
- Reconnaissance Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for targeted reconnaissance efforts. Typically the data in this module is associated with ESF-10 deployments and the clean-up of orphaned containers and hazardous debris, but the module can be utilized for any and all reconnaissance activities.
- Facility Assessment Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for assessments of structures. This is typically utilized for EPA regulated program facilities during an ESF-10 deployment of resources. This module can be utilized to track the assessment of any facilities including multiple assessments of the fixed facilities.
- Shipping Module – provides standard templates for creating a cradle-to-grave record of waste shipments from the site until they are recycled or destroyed. This includes the ability to capture manifests and manifest line items and to upload photos/original documents to support the records.
- Container Module – provides standard templates for cataloguing containers including HAZCAT and Layer information in each container. The module also allows for the tracking of which containers are bulked.
- Properties Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for collection of property data

including access agreements and assessments of the property and current status of property regarding the site removal action.

- Materials Module – provides standard templates for tracking materials that are brought on-site or that are removed from the site.
- Daily Reports – provides standard templates for tracking daily site activities, daily site personnel, and daily site notes for reporting back to the EPA OSC in a POLREP or SITREP.
- HHW Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for tracking the amount of HHW collected at individual collection stations by HHW type.
- Data Files – data files can be uploaded in the photo-module section and be associated with individual records or with the site in general. The meta data associated with that data file can be filled in using the photo log fields.

The data stored in the Response Manager database can be viewed and edited by any individual with access rights to those functions. At anytime deemed necessary, POLREP and/or SITREPs can be generated by exporting the data out of Response Manager into Microsoft Excel/Word. The database is stored on a secure server and backed up regularly.